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09/730,375	12/05/2000	Charles Simonyi	777.355US6	7330
22801	7590	09/23/2004	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			VO, TED T	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/730,375

Applicant(s)

SIMONYI, CHARLES

Examiner

Ted T. Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the Correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is in response to the amendment filed on 06/15/04.

Claims 22-24 are amended in replying to office rejection, mailed date, 02/23/04, under 35 U.S.C. 112, second paragraph. Accordingly, this rejection is withdrawn.

After carefully reconsidering the Claims 13-24, the 35 U.S.C. 101 issue is reconsidered, and this necessitates a new ground of rejection. Accordingly, this office action is non-final.

Claims 13-24 are pending in the application.

### *Response to Argument*

2. Applicants' arguments to the rejection of Claims 13, 17, and 21 given in the Remarks section (remarks: pages 6-10) are fully considered; however, the arguments are not persuasive. For example,

With regard to Claim 13, Applicants argue Hendren does not show or disclose a "syntax-independent programming intent" and Applicants argue Hendren does not disclose identifying a syntax-independent programming intent.

Examiner disagrees: Within the broaden scope of the claim, each node shown in the General Expression Tree (Hendren: page 10, Figure 7) has means of syntax-independent programming intent because a shown node in the tree itself implements a data structure node or a formula calculation. For example node 'p' shown within the dash box) implements a data structure node.

For the argument "Hendren does not disclose identifying a syntax-independent programming intent", Examiner would note that an instance of exposing, a detection (Hendren: page 9, Figure 6, first rectangular box: 'detection of induction pattern and Formula Calculation'), or what it is seen in the data structure has means of this limitation. The Figure 7 shows every node, including node 'p', which identified from exposing to a viewer or the detection in Figure 6.

With regard to arguments directing to Claims 17 and 21, the limitation is corresponding to the limitation as recited in Claim 13.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. The claims 13-24 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 13-16:

Claim 13 recites a product ***"One or more computer readable media comprising computer executable instructions that, when executed, direct a computer to implement a method"***.

All the steps as recited are merely identifying the nodes in a tree data structure, in which the identification does not incorporated within the specification toward a practical manner.

For example,

***identifying a syntax-independent programming intent represented as a first node of a data structure***, merely identifying;

***identifying a second node of the data structure, the second node being referenced from the first node and containing data***, merely identifying;

***identifying a unique name for code associated with the syntax-independent programming intent***, merely identifying.

Under the statute of 35 U.S.C 101, it requires claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result". Lack of one of these, the Claim fails to meet the requirement. In this particular case, the complete disclosure does not contain the indication of the practical application within the steps of identification for the claimed invention.

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The Claim does nothing more than consists solely of the steps of identification. Therefore, such claim fails to be in the technological or useful arts and thus fails to recite patent eligible subject matters.

Claims 14-16 fail to remedy the deficiencies of independent claim 13; particularly, claim 14 comprising "executing the code identified by the unique name" is merely execution that cannot remedy the claim 13 deficiencies

- According to the analysis above, claims 13-16 are manipulating an abstract idea that is not implemented with a practical application. The claims 13-16 thus are held nonstatutory.

As per claims 17-20: Claims 17-20 are the process implemented in the claim's product of claims 13-16. The claims thus fail meet 35 U.S.C 101. Moreover, Claims fails to be hardware-embodied. Therefore, claims 17-20 are manipulating an abstract idea that is not implemented with a practical application, and fail to be hardware-embodied. The Claims 17-20 thus are held nonstatutory.

As per claims 21-24:

Claim 21 recites a computer media **"One or more computer readable media configured to maintain a data structure that is a syntax-independent representation of a program, the data structure comprising:**

**a first node received as an input and configured for display as a representation of a syntax-independent programming intent;**

**a second node having data configured for manipulation when implementing the a syntax-independent programming intent; and**

**wherein the first node has a unique identifier of the second node, and the first node uniquely identifies code for implementing the programming intent.**

Claim 21 recites the media "maintaining" a data structure. However, the further limitation recites solely nodes that do nothing with maintaining, but the inner structures of nodes (**a first node, a second node**). Moreover, the shown nodes would not be embodied in those media and have no capability of causing functional change in the computer, but rather being labeled (**configured for manipulation when implementing the a syntax-independent programming intent and having data configured for manipulation when implementing the a syntax-independent programming intent, and wherein the**

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*first node has a unique identifier of the second node, and the first node uniquely identifies code for implementing the programming intent*). Claim 21 is descriptive material data, and cannot exhibit any functional interrelationship with the way in which computing processes are performed, thus do not constitute a statutory process.

Claims 22-24 fail to remedy the deficiencies of independent claim 21.

- According to the analysis above, claims 22-24 are nonfunctional descriptive data that does not in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. 101. The Claims 22-24 thus are held nonstatutory.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 13-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Hendren et al., (hereafter: Hendren) "Supporting Array Dependence Testing for an Optimizing/Parallelizing C Compiler" (10/19/1993).

As per Claim 13:

Hendren discloses, "***One or more computer readable media*** (See page 312, Figure. 2, a McCat Environment) ***comprising computer executable instructions*** (See Figure. 2, 'SIMPLE') ***that, when executed, direct a computer to implement a method comprising:***

***identifying*** (See Figure. 2, 'SIMPLE' and Points-to Analysis) ***a syntax-independent programming intent represented as a first node of a data structure*** (See page 10, in Figure 7(b),

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refer 'syntax-independent programming intent' as to any node in the tree data structure. For example node: 'p');

**identifying a second node of the data structure, the second node being referenced from the first node and containing data** (See page 10, Figure 7(b), following the arrow from the node 'p' is the node with the number 4, where 4 is data); **and**

**identifying a unique name for code associated with the syntax-independent programming intent** (See page 10, Figure 7(b), refer 'unique name' as 'p', and refer 'for code' as  $p=4$  [p 'arrows' 4]; or  $p=\text{tem}4-5$  [p 'arrows' -]).

As per Claim 14:

Hendren discloses, **"One or more computer readable media as recited in claim 13, further comprising computer executable instructions that, when executed, direct the computer to implement the method further comprising executing the code identified by the unique name"** (See page 10, lines 1-11, it uses "induction processing function" to calculate the induction formula).

As per Claim 15:

Hendren discloses, **"One or more computer readable media as recited in claim 13 wherein the code comprises low level computational constructs** (See page 10, Figure 7(b), with node 'p':  $p=4$ ; and  $p=\text{tem}4 - 5$  are low-level computational constructs).

As per Claim 16:

Hendren discloses, **"One or more computer readable media as recited in claim 13 wherein the first node** (Figure 7(b), node 'p'), **the second node** (Figure 7(b), node '4'; or node 'tem4'), **and additional nodes** (Figure 7(b), such as node 'r', or 'q') **of the data structure comprise a hierarchical tree of nodes that each represent a syntax-independent programming intent** (Figure 7(b), the tree structure in the dashed box).

As per Claim 17:

Claim 17 is a method of handling data in which the claim recites limitation that has the claim functionality corresponding to the limitation recited in Claim 13. Therefore, Claim 17 is rejected in the same reason set forth in connecting to the rejection of Claim 13.

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As per Claim 18:

Claim 18 is a method of handling data in which the claim recites limitation that has the claim functionality corresponding to the limitation recited in Claim 14. Therefore, Claim 18 is rejected in the same reason set forth in connecting to the rejection of Claim 14.

As per Claim 19:

Claim 19 is a method of handling data in which the claim recites limitation that has the claim functionality corresponding to the limitation recited in Claim 15. Therefore, Claim 19 is rejected in the same reason set forth in connecting to the rejection of Claim 15.

As per Claim 20:

Claim 20 is a method of handling data in which the claim recites limitation that has the claim functionality corresponding to the limitation recited in Claim 16. Therefore, Claim 20 is rejected in the same reason set forth in connecting to the rejection of Claim 16.

As per claim 21:

Hendren discloses, "**One or more computer readable media configured** (See page 312, Figure. 2, a McCat Environment) **to maintain a data structure** (See page 10, in Figure 7(b)) **that is a syntax-independent representation of a program, the data structure comprising:**

**a first node** (Figure 7(b), for example, node: 'p' in the dashed box) **received as an input** (Figure 7(b), for example, p=4 or p=tem4 - 5) **and configured for display as a representation of a syntax-independent programming intent** (tree structure of Figure 7(b));

**a second node** (Figure 7(b), for example, node: '4' in the dashed box or node '-') **having data configured for manipulation when implementing the a syntax-independent programming intent;**  
**and**

**wherein the first node has a unique identifier of the second node** (See page 10, Figure 7(b), refer 'unique identifier' as 'p', and refer 'second node' as '4'), **and the first node uniquely identifies code for implementing the programming intent** (See page 10, referring to p=4 [p 'arrows' 4]; or p=tem4-5 [p 'arrows' -]).

As per Claim 22:



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Hendren discloses, ***"One or more computer readable media as recited in claim 21 wherein one or more additional nodes (See Figure 7(b); for example node 'q') comprises a hierarchical tree of nodes that are each received as an input (See Figure 7(b); for example, refer 'q' as a hierarchical of nodes under q in the dashed box and q is an input of  $r=q$ ) and configured for display as a representation of a syntax-independent programming intent (Figure 7(b); tree structure), and wherein each of the one or more additional nodes uniquely identify code for implementing the respective programming intent.***

As per Claim 23:

Hendren discloses, ***"One or more computer readable media as recited in claim 22 wherein the one or more additional nodes comprise nodes selected from multiple different computational constructs (Figure 7(b); tree structure, referring to node '+' or '-').***

As per claim 24:

Hendren discloses, ***"One or more computer readable media as recited in claim 21, wherein the data structure further comprises:***

***a node type tag and unique identifier pointing to implementation code (Figure 7(b); the tree structure with a node tem0, tem1... or tem4);***

***an optional data section; and a list of offspring of the node identified by the node type tag and a list of pointers to further nodes "*** (in this case, it is referred to a list of subscripts of nodes (see page 11, section 5.2) or a data structure in Canonical Form (see page 15)).

### **Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be reached on 8:00AM to 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

After October 25, 2004, examiner can be reached at new telephone number (571) 272-3706 and the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3694.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TED T. VO

TTV  
Patent Examiner  
Art Unit 2122  
September 14, 2004